OIC - REVIEW 11/19/04

# NON-POINT SOURCE POLLUTION MANAGEMENT PLAN

## SPOKANE TRIBE OF INDIANS

**October 2004**

By

Brian Crossley
Water & Fish Program Manager
Spokane Tribe of Indians
P.O. Box 480
Wellpinit, WA 99040

# Table of Contents

# List of Tables & Figures

# Overview

## Introduction

The goal of the Non-Point Source Pollution Management Plan ('Management Plan') is to protect and enhance water quality for those waters of the Spokane Indian Reservation (SIR) by reducing and preventing non-point source pollution. Traditionally the Spokane Tribe depended heavily upon the waters to bring back salmon and recognized the importance clean water played in that role. Clean water also is required to provide productive natural resources that are clean and free of contamination. Such resources are required to support subsistence hunting, fishing, and gathering. Currently waters of the SIR continue to provide miles of lowland riparian vegetation, fish habitat, recreational opportunities, and cultural significance.

The primary objective of the Management Plan is to protect the uses identified in the Tribe's Water Quality Standards as well as the Integrated Resources Management Plan. If it is determined that waters do not meet these uses, the following methods are employed:

- Developing and ensuring that environmental codes pertaining to non-point pollution are passed and enforced
- Improving non-point pollution education to all ages and entities
- Use of structural and non-structural BMPs to reduce specific non-point source inputs
- Co-ordinate efforts with other agencies and organizations to receive the largest benefit possible
- Monitor effectiveness of BMP implementation and adaptively manage the overall plan at least every four years

There are five major potential sources of non-point pollution resulting from human activities on the reservation including:

- Runoff from logging and roads
- Failing stream banks from grazing and agricultural runoff
- Runoff from mining related activities
- Hydroelectric operations
- Residential, commercial and construction runoff

This plan will outline the general direction the Water & Fish Program will pursue for the next four years as it seeks financial assistance to control non-point source pollution.

## Management Program Summary

**Developing and ensuring that environmental codes pertaining to non-point pollution are passed and enforced**

There are a number of environmental codes and plans pertaining to NPS pollution. Although this plan relies heavily upon the voluntary assistance of landowners, regulation/code will provide the legal backing for improvement projects and increase participation by potential NPS polluters. Regulation will also provide a course of action for the Tribe if a landowner is uncooperative.

**Improving non-point pollution education to all ages and entities**

Education is an important tool in identifying non-point successes while teaching younger generations what the causes and implications of certain activities are. Loggers have been willing to implement BMPs if those practices have proven results. A large portion of the education efforts will be focused on road building, reopening, and skidding and decking operations as these practices can continue to influence water quality for decades after they occur.

**Use of structural and non-structural BMPs to reduce specific non-point source inputs**

Prevention of NPS pollution is vital to the continued success of any overall reduction and protection of water quality. At times the need arises to implement BMPs that repair the original problem through actual on the ground alterations or development of management plans that will address the non-point source impairment. The majority of the land on the SIR is Tribal trust land, allowing BMPs to be implemented without a land owner volunteering.

Areas contributing to the non-point pollution will need to be corrected by structural BMPs. These could include things such as culvert and road redesign, stream bank stabilization and fencing of riparian areas.

**Co-ordinate efforts with other agencies and organizations to receive the largest benefit possible**

Various measures have already been identified in the Integrated Resource Management Plan (IRMP) and Forest Management Plan with the goal of reducing non-point pollution. This plan will consider the measures already in place and strive to improve those areas that need more protection.

The SIR is located on the lower 33 miles of the Spokane River and receives considerable non-point pollution as identified in Cusimano (2004). To obtain a reduction in upstream sources of non-point pollution we will show our support to upriver planning and implementation projects that can result in reductions in NPS pollution.

**Monitor effectiveness of BMP implementation and adaptively manage the overall plan at least every four years**

As each step in this plan is implemented annually, each step will be monitored and evaluated as to its effectiveness in achieving the overall goal of pollution reduction. Modifications may be necessary to structural BMPs to achieve the desired results.

As the plan is implemented land uses will change and while specific NPS pollution sources will be controlled, others may arise that will need to be addressed in subsequent years. We will implement the plan on a annual basis and revisit the Management Plan every four years and modify it as new sources arise and overall direction changes.

# Management Plan

There are five major potential sources of non-point pollution resulting from human activities on the reservation namely runoff from logging and roads, failing stream banks from grazing, hydroelectric operations, runoff from mining related activities, agricultural runoff, construction runoff, and residential runoff.

## *Logging and roads*

Timber remains the largest revenue source for the Spokane Tribe as the third cutting cycle has recently been completed. Of the 157,000 acres of the reservation, 109,000 acres are considered commercial forest. Timber removal requires the reopening and new construction of roads. Road densities reach as high as 12 miles of road per square mile (IRMP, 2004). Improper design and maintenance of roads causes increased sediment transport and can cause them to occasionally fail.

Skid trails provide concentrated runoff and leave disturbed soils on steep terrain. New road construction is generally required on each timber sale as well as replacement and repair of culverts. Timber harvest can have a range of effects on the environment ranging from increased surface runoff, reduced or increased groundwater recharge, decreased soil hydraulic conductivity and porosity to increased downstream sedimentation and flooding.

The first year of plan implementation will require the review of current policies regarding forest practices pertaining to non-point pollution. Changes will be proposed if it is concluded that the proper protections are not adequate. Education and information sharing will be necessary for operators of heavy equipment as well as general membership of the Tribe through flyers, newspaper articles, and seminars. The largest portion of correcting and improving logging and logging-road related pollutant sources will be designing and implementing BMPs that reduce sediment runoff. Implementation of BMPs will include things such as presale recommendations, culvert repair, road redesign, and road reopening.

Coordination will be required between the Water & Fish Program and primarily BIA forestry and BIA roads but will also include any proposed land use activities and programs such as Timber Fish & Wildlife forest practices applications for fee land on and adjacent to the reservation.

**Table 1 Logging and roads milestones from 2005-2008.**

| Activity | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|
| Review (IRMP, Forest Plan, TFW rules) | X | | | |
| Public education, information and outreach on land use and water quality | X | X | X | X |
| Conduct seminars on general road, culvert, and water bar construction for installers | | X | | X |
| BMPs<br>Develop road inventory survey and ranking | X | | | |
| Road inventory and closures | | X | X | X |
| Water bar demonstration project | X | | | |
| Implement water bar requirements in timber sale contract language | | X | | |
| Begin soil moisture monitoring and set guidelines on acceptable operation times | | X | X | X |
| Coordination with tribal and non-tribal organizations | X | X | X | X |
| Monitoring and plan review | | X | X | X |

**Table 2 Logging and Roads Implementation Schedule from 2005-2008.**

| Activity | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|
| Educational outreach and road construction and design classes | 5,000 | 7,000 | 5,000 | 7,000 |
| Planning, designing , and implementation of BMP's | 45,000 | 65,000 | 65,000 | 75,000 |
| Coordination with tribal and non-tribal organizations | 5,000 | 5,000 | 5,000 | 5,000 |
| Monitoring and plan review | 5,000 | 5,000 | 5,000 | 5,000 |
| **Total Funding Need** | **60,000** | **82,000** | **80,000** | **92,000** |

## *Grazing and Farming*

Grazing can be found throughout the reservations due to the "open range" policy. Cattle and sheep grazing historically were much larger than exists currently but it continues to affect water quality in the forms of temperature, bacteria, and sedimentation. Suppression of riparian vegetation leads to increased temperatures while heavy livestock use can destabilize banks increasing erosion and sediment transport. Bacteria levels can increase in areas where livestock are concentrated.

Farming, both dry and irrigated can cause non-point pollution in the forms of sediment runoff. There are approximately 7,900 acres of agricultural land on the reservation with potential to more than double those acres. Sediment runoff originating from farm fields potentially caries high levels of fertilizers and herbicides. Stream channelization results when streams encroach on fields and the alterations cause increased velocities, lost habitat, and additional erosion. Studies will have to be initiated that determine the levels of non-point pollution from farming.

**Table 3 Grazing and Farming milestones from 2005-2008.**

| Activity | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|
| Codes/regulation | X | | | |
| Public education, information and outreach on land use and water quality | X | X | X | X |
| BMPs | | | | |
| Stabilization of Tshimikain @ Morgans | X | X | | |
| Design and implement watering access points, salting, and rotation projects | X | X | X | X |
| Survey farmlands for potential NPS sites | X | | X | |
| Implement waster conservation and nutrient BMP's for agricultural lands | | X | | X |
| Coordination with tribal and non-tribal organizations | X | X | X | X |
| Monitoring and plan review | | X | X | X |

**Table 4 Grazing and Farming Implementation Schedule from 2005-2008.**

| Activity | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|
| Public education, information and outreach on land use and water quality. | 5,000 | 5,000 | 5,000 | 5,000 |
| Planning, designing, and implementation of BMP's | 35,000 | 35,000 | 35,000 | 45,000 |
| Coordination with organizations | 5,000 | 5,000 | 5,000 | 5,000 |
| Monitoring and review of plan and BMP's | 5,000 | 10,000 | 10,000 | 10,000 |
| **Total Funding Need** | **50,000** | **55,000** | **55,000** | **65,000** |

## *Mining*

Although there has been some speculative mining for precious metals, the primary mining impacts on the reservation have been from the extraction and milling of uranium. The two uranium mines were the Sherwood and Midnite while ore was processed at Dawn Mining's Mill at Ford, WA and continues to affect the reservation.

The Sherwood mine has been reclaimed and has been returned to the Tribe as annual monitoring of wells and plant communities continues. The Midnite Mine is currently listed on the Federal Priorities List (Superfund) with its associated ecological and human health risk assessments nearing their final stages and clean-up proposals being considered.

Considerable amounts of soil and substrate have been removed and remain in stock piles leaching contaminants into the adjoining streams and springs. It is expected that reclamation will begin within the next five years and we will be working with that process in reviewing proposed actions and implementing the Tribal Hydraulics Code associated with any clean-up occurring within the waters of the reservation.

We will determine if monitoring is needed on contaminated roads and ore stockpiles and will rely upon EPA and the clean-up contractors to implement desired BMP's.

**Table 5 Mining milestones from 2005-2008**

| Activity | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|
| Codes/regulation | | | | |
| Review of Hydraulics Code | X | | | |
| Implementation of Hydraulics Code | X | X | X | X |
| Public education, information and outreach on land use and water quality | | X | X | X |
| Planning, designing, and implementation of BMPs | | | X | X |
| Coordination with tribal and non-tribal organizations | X | X | X | X |
| Monitoring and plan review | | X | X | X |

**Table 6 Mining Implementation Schedule from 2005-2008.**

| Activity | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|
| Review and Implementation of Hydraulics Code | 5,000 | 5,000 | 5,000 | 5,000 |
| Education and outreach | 5,000 | 5,000 | 5,000 | 5,000 |
| Planning, designing, and implementation of BMP's | 0 | 0 | 25,000 | 25,000 |
| Coordination with EPA and reclamation efforts | 10,000 | 10,000 | 10,000 | 10,000 |
| Monitoring and review of plan and BMP's | 2,000 | 2,000 | 5,000 | 7,000 |
| **Total Funding Need** | **22,000** | **22,000** | **50,000** | **52,000** |

## *Hydroelectric*

Little Falls Dam is the only hydroelectric facility within the boundaries of the SIR although effects from other hydroelectric operations influence tribal waters from as far as Canada and Idaho. Grand Coulee Dam, which creates Lake Roosevelt, backs up water on two sides of the reservation while Long Lake Dam, immediately upstream of the reservation along the Spokane River, produces high dissolved gas. Because the majority of dams on the Spokane, Columbia, and Pend Oreille Rivers discharge immediately into a reservoir there is minimal gas dissipation. This means that total dissolved gas is a problem in these boundary waters.

The major water quality problems associated with hydroelectric projects is the creation of reservoirs which in turn increase surface area, evaporation, and temperature. Ramping and annual drawdowns cause erosion of banks and make it difficult for riparian species to become established, except in tributary areas. Reservoirs create habitat for invasive non-native aquatic plants that can significantly reduce dissolved oxygen levels and inhibit swimming and other recreation opportunities. Boating in reservoirs magnify erosion of banks from boat wakes and residences produce high nutrient and pesticide loading from lawns and septic systems. Contaminated sediments settle out in reservoirs when velocities drop leading to fish advisories in both the Spokane and Columbia Rivers. Total dissolved gas (TDG) has been measured well above the standard in the both the Spokane River and Columbia River and continue to affect fish throughout each system (CH2MHill 1999-2002, Golder 2003, 2004).

The Water & Fish Program will be the lead agency insuring that non-point pollution effects from the hydroelectric projects are being addressed. Avista will most likely be implementing mitigation and enhancement measures associated with the issuance of its new license. Additional funding may be available to support implementation and monitoring of non-point pollution.

**Table 7 Hydroelectric milestones from 2005-2008.**

| Activity | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|
| Codes/regulation | | | | |
| Review tribal 401 certification process | X | | | |
| Initiate 401 certification for Little Falls Dam | | X | X | |
| Public education, information and outreach on land use and water quality | X | X | X | X |
| BMPs | | | | |
| Review and propose PM&E and BMP measures proposed through FERC relicensing of Spokane River Project | X | X | | |
| Develop designated boat ramps for areas impacted by boat launching | | X | X | |

| | | | | |
|---|---|---|---|---|
| Propose and implement BMP's for recreation areas | | X | X | X |
| Assist in implementing BMP's identified in associated TMDL's | X | X | X | X |
| Coordination with tribal and non-tribal organizations | X | X | X | X |
| Monitoring and plan review | | | | X |
| Monitor TDG, DO and temperature | X | X | X | X |
| Evaluate recreation sites for pollution sources | X | | | |

**Table 8 Hydroelectric Implementation Schedule from 2005-2008.**

| Activity | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|
| Review 401 process and initiate for Little Falls Dam | 5,000 | 15,000 | 15,000 | 0 |
| Education and outreach | 5,000 | 5,000 | 5,000 | 5,000 |
| Planning, designing, and implementation of BMP's | 10,000 | 25,000 | 25,000 | 25,000 |
| Coordination with HED operators and other resource agencies | 5,000 | 5,000 | 5,000 | 5,000 |
| Monitoring TDG, DO, and temperature; plan review | 10,000 | 10,000 | 10,000 | 10,000 |
| **Total Funding Need** | **35,000** | **60,000** | **60,000** | **45,000** |

## *Residential, Commercial, and Construction*

Pollution associated with tribal enterprises could include; septic and fuel entering into the water at the marinas, RV septic pump-outs, lumber treatment waste, and vehicle fluids leaching into nearby wetlands. Monitoring these sources is crucial as well as educating operators and the general public. Contaminant containment systems should be evaluated and implemented if none exist.

There are 5 housing projects on the SIR which house a majority of the residents. Sewer systems vary from individual septic tanks, community sand filtration, and a lagoon. Potential for nutrients and contaminants is high in locations of shallow groundwater and connectivity with streams. Household chemicals, pesticides, and vehicle waste can enter groundwater and contaminate soils. Driveways and street runoff can result in increased erosion and transport of contaminants. Education to residences in housing projects as well as rural homes will assist in developing awareness of the potential sources of contamination.

There are two major landfill sites on the reservation that are recognized as outdated and not serving the solid waste needs of residents on the SIR. Construction of waste transfer stations is under way to better manage solid waste. The landfills will be reclaimed and monitored for contamination. Implementing programs to allow collection of automotive waste, batteries, and household chemicals will be necessary as part of the transfer station operations. We will work with them to evaluate the various aspects and develop BMP's to improve those areas not meeting pollution control objectives. Education and enforcement will play a key role in sorting solid waste and preventing illegal dumping.

Stormwater drainage from parking lots and buildings occurs although it is limited to small areas. New construction has been implementing stormwater drains whereas many existing buildings and parking areas do not have stormwater management systems in place. An evaluation of potential stormwater problems would be conducted followed by implementation of BMP's. New road construction, (BIA, county and state) will be investigated to insure proper non-point pollution management. Major roads will need surveyed to identify potential sources of erosion before implementing BMP's.

**Table 9 Residential, Commercial and Construction milestones from 2005-2008.**

| Activity | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|
| Codes/regulation | X | | X | |
| Public education, information and outreach on land use and water quality | X | X | X | X |
| BMPs | | | | |
| Assist collection of toxic pollutants, household chemicals, and automotive waste at transfer stations and implement permanent programs | X | X | X | X |
| Design and implement stormwater BMPs | | X | X | X |
| Implement individual septic tank evaluation program | | X | X | X |
| Coordination with tribal and non-tribal organizations | X | X | X | X |
| Monitoring and plan review | X | X | X | X |

**Table 10 Residential, Commercial, and Construction Implementation Schedule from 2005-2008.**

| Activity | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|
| Review codes and regulation Education and outreach | 7,000 | 5,000 | 7,000 | 5,000 |
| Planning, designing, and implementation of BMP's | 10,000 | 15,000 | 20,000 | 25,000 |
| Coordination with IHS, Tribal Public Works, HHS | 5,000 | 10,000 | 10,000 | 10,000 |
| Monitor septic tanks, waste collection; review plan | 2,000 | 5,000 | 5,000 | 7,000 |
| **Total Funding Need** | **24,000** | **35,000** | **42,000** | **47,000** |

## Existing Authorities and Programs

The Tribe has full authority of the entire reservation as wells as off-Reservation properties held in trust. Authorities for adjacent lands are described herein, because management of these lands could affect Reservation resources.

### *Tribal Programs*

The various programs that either directly or indirectly affect non-point source pollution are:

**Water & Fish Program**, funded by EPA (Section 106 of the CWA) , BPA, GAP, CTWQP, and Tribe. Administers the Water Quality Standards, monitors and evaluates all ground and surface waters as well as conducts fisheries/stream surveys. This program also conducts all required sampling of community water systems pursuant to the SDWA.

**Wildlife Program**, funded by BPA, primarily manages mitigation lands for wildlife by restoring native landscapes, plants, and water. Uses EQUIP to augment improvements to purchased properties as well as Tribal land.

**Forestry (BIA and Tribal)** responsibilities include managing the forests of the Reservation. Specific duties include planning timber sales and roads.

**Spokane Indian Reservation Timber Products Enterprise (SIRTPE)** is the enterprise set up to bid and broker timber sales and is primarily responsible for opening and maintaining tribal roads associated with logging operations.

### *Tribal Regulation*

The **Interdisciplinary Team** (ID Team) serves as the primary process for review of all land use activities from home site development to timber management. Currently through the 106 program the Water & Fish Program participates on the ID Team and makes recommendations on behalf of water quality and fish. The non-point program will work in coordination with the 106 program to insure that non-point pollution will be specifically addressed.

The **Environmental Code**, enforced by the Environmental Officer encompasses illegal dumping and general regulation regarding the environment.

**Water Quality Standards**, approved by EPA in 2003, identifies uses for the water bodies of the reservation and the applicable levels of pollutants that will meet those standards. The Tribe also received 401 certification authority and is completing the certification

procedures. The Water & Fish Program administers the Standards, through the Department of Natural Resources.

The **Integrated Resource Management Plan** (IRMP) first developed in 1994 and currently under revision is the 10-year management plan for all land use activities occurring on the reservation and serves as the general planning document.

**Forest Management Plan** is developed in concert with the IRMP and identifies more specific forest management practices.

Draft **Hydraulic Code** would be administered through the Department of Natural Resources and would apply to any activities within the ordinary high water mark on all waters of the SIR.

### *County*

**Stevens County** is contains the entire Reservation and through watershed planning and implementation of state laws can affect non-point pollution of the Reservation waters.

**Lincoln County** shares the southern boundary of the Reservation and have implemented BMP's and regulates housing and development areas along the Spokane Arm of Lake Roosevelt and Lake Roosevelt proper.

**Spokane County** is the lead agency in developing the WRIA 54 plan and will be key in its implementation. Spokane County is responsible for growth affecting the Spokane River and its tributaries upstream of the Reservation.

**Conservation Districts (Stevens, Spokane, Lincoln)** all work with landowners in their respective counties and strive to reduce non-point pollution. The Tribe will most likely increase their involvement in upstream non-point management with each conservation district as funding allows.

### *State*

**Washington Department of Ecology (WDOE)** has its own non-point source pollution program which could be applied directly to those waters entering the Reservation. Additional resources such as the Stormwater Management Manual for Eastern Washington will provide valuable resources.

**Watershed Planning** Act; administered by WDOE, establishes a watershed management process to assess water quality, quantity, and instream flow and ultimately developing a plan that, when implemented, would provide for those uses in the watershed towards the future. The Spokane Tribe has been involved in the Colville River Watershed (WRIA 59) as the watershed plan is nearing completion. Three additional watershed planning groups currently meeting and working on management plans are: WRIA 55 – 57 (Middle

Spokane and Little Spokane River), WRIA 56 (Hangman Creek), and WRIA 58 (Upper Columbia). The Spokane Tribe has just begun in the WRIA 54 (Lower Spokane) process of which includes over 90% of the reservation.

**Total Maximum Daily Loads** (TMDL) or water quality clean-up plans are required in those waters that are placed on the state 303d list of impaired waters. TMDL's have an assessment or allocation followed by an implementation strategy. TMDL's related to non-point source pollution affecting tribal waters would include:

| Waterbody | Constituent | Status |
|---|---|---|
| Spokane River | Phosphorus | Completed |
| Spokane River | PCB | Ongoing |
| Spokane River | Dissolved Oxygen | Ongoing |
| Spokane River | TDG | Ongoing |
| Columbia River | TDG | Completed |
| Columbia River | Temperature | Ongoing |
| Pend Oreille River | TDG | Ongoing |

**Timber Fish and Wildlife** (TFW) passed in 1987 is a consortium between the states and Tribes relating primarily to forest practices. See also TFW Tribal.

### *Federal*

**Environmental Protection Agency (EPA)** has a trust responsibility to the Spokane Tribe to ensure that its water, air, and land of good quality and support the many uses of the residences of the Reservation. Funding is provided through GAP, CWA, and others to assist the Tribe in monitoring and improving its resources. EPA also has the authority to enforce violations to Tribal Water Quality Standards.

**Coordinated Tribal Water Quality Program (CTWQP)** has provided water quality funding to the Tribe as well as combining the voices of northwestern Tribes in related water quality issues. Has developed water quality databases and provided specific training for Tribes.

**Federal Energy Regulatory Commission (FERC)** oversees the relicensing of hydroelectric projects which affect both the Spokane and Columbia Rivers of the Reservation.

**Bureau of Reclamation (BOR)** built and operates Grand Coulee Dam which creates Lake Roosevelt. Although dam operations are a joint decision by multiple entities within the Columbia River system, some measures are specifically handled directly through the BOR.

**National Park Service (NPS)** manages many of the boat ramps and camping areas around Lake Roosevelt and can potentially play a role in reducing identified non-point pollution.

### *Non-Governmental*

**Avista Corporation** operates six hydroelectric projects on the Spokane River and is currently seeking a new license. Measures under their new license could be implemented to reduce non-point pollution.

**Little Falls Operations Scientific Workgroup (OSG)** consists of the Tribe and Avista working specifically with issues of Little Falls Dam per the agreement made in 1994.

## References\Sources


Crossley B.R, 2003. Non-Point Source Pollution Assessment, Spokane Tribe of Indians. Department of Natural Resources, Water & Fish Program. Wellpinit, WA.

Integrated Resource Management Plan (IRMP), 1994. Spokane Tribe of Indians. Wellpinit, WA.

(DRAFT) Integrated Resource Management Plan (IRMP), 2004. Spokane Tribe of Indians. Wellpinit, WA.

Forest Management Plan, 1994. Spokane Tribe of Indians. Wellpinit, WA.

CH2MHILL. 2003. Spokane River Water Quality Monitoring Data Summary. April 1999 to March 2002. Prepared for Avista Utilities by CH2MHILL.

USEPA. 1997. Tribal Nonpoint Source Planning Handbook. Publication Number EPA-841-B-97-004. United States Environmental Protection Agency, Office of Water. Washington, DC.

Golder Associates. 2003. Total Dissolved Gas Pressure (TDG) Monitoring on the Spokane River 2003 Data Report. Report prepared for Avista Corporation, Castlegar, BC. Golder Report No. 033-1363CD; 48 p. + 2 appendices, 1 CD.

Golder Associates. 2004. Total Dissolved Gas Pressure (TDG) Monitoring on the Spokane River, 2004 Draft Data Report. Prepared for Avista Corporation.

Cusimano R.F., 2004. Spokane River and Lake Spokane (Long Lake) Pollutant Loading Assessment for Protecting Dissolved Oxygen. Publication Number 04-03-0006. Washington State Department of Ecology, Environmental Assessment Program, Olympia, WA.

Spokane Tribe of Indians, 2003. Surface Water Quality Standards. Resolution 2003-259. Wellpinit, WA.

## Acronyms

| | |
|---|---|
| BIA | Bureau of Indian Affairs |
| BMP | Best Management Practice |
| BOR | Bureau of Reclamation |
| BPA | Bonneville Power Administration |
| CTWQP | Coordinated Tribal Water Quality Program |
| CWA | Clean Water Act |
| EPA | Environmental Protection Agency |
| EQUIP | Environmental Quality Incentive Program |
| FERC | Federal Energy Regulatory Commission |
| GAP | General Assistance Program (EPA) |
| ID Team | Interdisciplinary Team |
| HIS | Indian Housing Authority |
| IRMP | Integrated Resource Management Plan |
| NPS | National Park Service |
| NPS | Non-Point Source Pollution |
| OSG | (Little Falls) Operations and Scientific Workgroup |
| PM&E | Potential Mitigation and Enhancement |
| SDWA | Safe Drinking Water Act |
| SIR | Spokane Indian Reservation |
| SIRTPE | Spokane Indian Reservation Timber Products Enterprise |
| TDG | total dissolved gas |
| TFW | Timber, Fish & Wildlife |
| TMDL | Total Maximum Daily Load (water clean-up plan) |
| WDOE | Washington Department of Ecology |
| WRIA | Watershed Resource Inventory Area |